

REMARKS/ARGUMENTS

Claims 21-40 are pending in this application, with claims 21, 35, and 39 being the only independent claims. Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

Claims 21-27 and 35-40 stand rejected under 35 U.S.C. §102(b) as anticipated by GB 1301214 (Minto).

Claims 21-27 and 35-40 stand rejected under 35 U.S.C. §102(b) as anticipated by US 2003/0172654 (Lawheed).

Claims 21-27 and 35-40 stand rejected under 35 U.S.C. §102(b) as anticipated by DE 3619547 (Koch).

Claims 28-34 stand rejected under 35 U.S.C. §103 as obvious over Lawheed in view of WO 85/02881 (Lipovetz).

The present invention relates to a method of transforming heat energy to mechanical energy in a low-pressure expansion device. More specifically, the present application discloses an evaporator 6 having an output connected to a low-pressure expansion device 2 (see Fig. 1 of the present application as filed). Water that has been evaporated in the evaporator 6 is fed to the expansion device 2, which is formed as a roots blower (see page 6, lines 16-20 of the application as originally filed). The evaporated water is expanded in the roots blower 2, which expansion causes the roots blower to rotate thereby converting the working fluid to mechanical energy (see page 6, lines 11-20).

Independent claim 1 recites “expanding the evaporated working fluid in a low-pressure expansion device, wherein the low-pressure expansion device is a roots blower arranged and

dimensioned so that the working fluid is expanded therein and heat energy is transformed to mechanical energy”.

Roots blowers are used to pump gas across a limited pressure differential. Filed concurrently herewith is an Information Disclosure Statement (IDS) citing a wikipedia entry for a roots blower or roots supercharger. Roots blowers are also the subject of many U.S. patents. As an example, we have also cited U.S. Patent No. 4,709,682 in the IDS. It is clear from these references that the term “roots blower” is a specific device that is typically used as a supercharger in automobiles. Furthermore, none of the prior art of record discloses a method of converting heat energy to mechanical energy using a roots blower, as expressly recited in independent claim 21.

Minto discloses a prime mover system comprising a helical screw rotor engine 10. This device provides significant compression/expansion of the volume between the teeth. Accordingly, this differs from the functional principle of a roots blower. Accordingly, Minto can not be considered to disclose “expanding the evaporated working fluid in a low-pressure expansion device, wherein the low-pressure expansion device is a roots blower arranged and dimensioned so that the working fluid is expanded therein and heat energy is transformed to mechanical energy”, as expressly recited in independent claim 21.

Lawheed discloses a special toothed wheel pump or Rankine cycle mechanism. However, Lawheed also fails to specifically disclose a roots blower. Accordingly, Lawheed can not be considered to disclose “expanding the evaporated working fluid in a low-pressure expansion device, wherein the low-pressure expansion device is a roots blower arranged and dimensioned so that the working fluid is expanded therein and heat energy is transformed to mechanical energy”, as expressly recited in independent claim 21.

Koch discloses a centrifugal compressor which also can not be considered to be a roots blower. Accordingly, Koch can not be considered to disclose “expanding the evaporated working fluid in a low-pressure expansion device, wherein the low-pressure expansion device is a roots blower arranged and dimensioned so that the working fluid is expanded therein and heat energy is transformed to mechanical energy”, as expressly recited in independent claim 21.

In view of the above remarks, independent claim 21 is allowable over the prior art of record.

Independent claim 35 and 39 include similar limitations to independent claim 21 and are allowable for at least the same reasons.

Dependent claims 22-34, 36-37, and 40 are allowable for the same reasons as are independent claims 21, 35, and 39, as well as for the additional recitations contained therein.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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